

CLAIMS:

1. A high-density electrical connector comprising:

5 a housing which holds a plurality of conductive terminals, the terminals having contact portions for mating to opposing contact portions of opposing terminals of a mating connector, said terminals including at least first and second distinct sets of terminals, each distinct set of terminals including a pair of differential signal terminals and an associated ground terminal, said housing being formed from at least first and second interengaging segments, the first of said segments supporting said first distinct set of terminals, and said second of said segments supporting said second distinct set of terminals; and

10 the two distinct sets of terminals being disposed in at least two rows on said housing, one of the two rows including a pair of differential signal terminals from said first distinct set of terminals and a ground terminal from said second distinct set of terminals, the other of said two rows including a pair of differential signal terminals from said second distinct set of terminals and a ground terminal from said first distinct set of terminals, said first and second distinct sets of terminals being inverted with respect to 15 each other within said housing.

2. The high-density connector of claim 1, wherein each of said housing first and second interengaging segments include complementary-shaped projections and recesses.

3. The high-density connector of claim 1, wherein said housing first and second interengaging segment complementary-shaped projections and recesses are disposed on opposing sides of said segments.

4. The high-density connector of claim 3, wherein each of said housing first and second interengaging segment complementary-shaped projections and recesses are wedge-shaped.

5. The high-density connector of claim 1, wherein said terminals include contact portions extending from a first face of said housing segments and tail portions extending from a second face of said housing segments.

6. The high-density connector of claim 5, wherein said first and second faces are disposed on opposite sides of said housing segments
7. The high-density connector of claim 1, further including an exterior carrier member that engages said housing segments and holds them together as a unit
8. The high-density connector of claim 7, wherein said carrier member includes an internal cavity that receives said housing segments therein
9. The high-density connector of claim 5, wherein, for each of said housing segments, said signal terminal contact portions are spaced apart from each other in a horizontal direction and said ground terminal contact portion is spaced vertically apart from said signal terminal contact portions.
10. The high-density connector of claim 9, wherein said housing segments each include an insulative contact blade portion that extends out from said first face and said signal and ground terminal contact portions are disposed on opposite sides of said plug portion.
11. The high-density connector of claim 2, wherein each of said housing first and second interengaging segment complementary-shaped projections and recesses includes mortise and tenon members.
12. The high-density connector of claim 1, wherein said terminals are arranged in a triangular pattern in each of said housing segments, such that said two differential signal and said associated ground terminals are arranged at vertices of an imaginary triangle and maintain the triangular pattern through said housing segments.
13. The high-density connector of claim 5, wherein said terminal contact portions are arranged in a triangular pattern on said housing segment first faces, whereby said contact portions of said two differential signal and said associated ground terminals are arranged at vertices of an imaginary triangle when viewed from said first faces thereof.

14. The high-density connector of claim 13, wherein said terminal tail portions are arranged in a triangular pattern on said housing segment second faces, whereby said tail portions of said two differential signal and said associated ground terminals are arranged at vertices of an imaginary triangle when viewed from said second faces thereof.
15. The high-density connector of claim 2, wherein said projections and recesses are sized so as to leave air gaps between portions adjacent ones of said interengaging housing segments.
16. The high-density connector of claim 15, wherein the air gaps extend in horizontal directions.
17. The high-density connector of claim 15, wherein said air gaps extend in vertical directions.